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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/839,075	04/20/2001	Paul F. Struhsaker	WEST14-00023	2718

7590 03/29/2004

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EXAMINER

PHAN, HUY Q

ART UNIT	PAPER NUMBER
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2685

DATE MAILED: 03/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/839,075

Applicant(s)

STRUHSAKER, PAUL F.

Examiner

Huy Q Phan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3 and 7.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over
Lenzo et al. (US-6,587,444).

Regarding claim 1, Lenzo et al. disclose in figure 1, a TDD FDD system (100) comprising: a first base station and a first subscriber unit, the first base station transmitting to the first subscriber unit on a downlink frequency during a first time period and the first subscriber unit transmitting to the first base station on an uplink frequency during a second time period following the first time period; and a second base station and a second subscriber unit, the second base station transmitting to the second subscriber unit on the downlink frequency during the second time period and the second subscriber unit transmitting to the second base station on the uplink frequency during the first time period (col. 2, line 66-col. 3, line 27). Lenzo et al. fail particularly to show the sectored system as a first base station and a first subscriber unit within a first sector, and a second base station and a second subscriber unit within a second sector adjacent to the first sector. However, since Lenzo et al. disclose the specific transmit and receive technique as recited; therefore, it would have been obvious at the time the invention

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was made to one of ordinary skill in the art to modify the system of Lenzo et al. by specially having first base station and a first subscriber unit within a first sector, and a second base station and a second subscriber unit within a second sector adjacent to the first sector in order for sectorized systems to obtain the same benefits.

Regarding claim 2, Lenzo et al. disclose the system as recited in the rejection of claim 1, wherein the first base station is the second base station and the first and second sectors are adjacent sectors within a single cell (col. 2, lines 47-65).

Regarding claim 3, Lenzo et al. disclose the system as set forth in claim 1, wherein the first base station being separated from the second base station and the first and second sectors being adjacent sectors within adjoining cells (col. 2, line 66-col. 3, line 27).

Regarding claim 4, Lenzo et al. disclose the system as set forth in claim 1, wherein the downlink frequency and the uplink frequency being separated by a predefined duplex spacing (col. 5, lines 1-4), and wherein filtering of received signals at the downlink and uplink frequencies (fig. 6, box 640 and col. 8, lines 15-16) preventing out-of-band transmission signal strength from reaching an interference level.

Regarding claim 5, Lenzo et al. disclose in figure 6, a transceiver (600), comprising: means for transmitting or receiving on a first frequency designated for

downlink transmission during a first time period; and means for receiving or transmitting on a second frequency different from the first frequency and designated for uplink transmission during a second time period following the first time period, wherein the first frequency being employed for downlink transmission during the second time period and the second frequency being employed for uplink transmission during the first time period (col. 2, lines 47-65). Lenzo et al. do not explicitly disclose the sectored system means for transmitting within a first sector during a first time period; and means for receiving within the first sector during a second time period following the first time period, wherein the first frequency is employed for downlink transmission during the second time period within a second sector adjacent to the first sector and the second frequency is employed for uplink transmission during the first time period within the second sector. However, since Lenzo et al. disclose the specific transmit and receive technique as recited; therefore, it would have been obvious at the time the invention was made to one of ordinary skill in the art to modify the system of Lenzo et al. by specially means for transmitting within a first sector during a first time period; and means for receiving within the first sector during a second time period following the first time period, wherein the first frequency is employed for downlink transmission during the second time period within a second sector adjacent to the first sector and the second frequency being employed for uplink transmission during the first time period within the second sector in order to obtain the same benefits for sectored systems.

Regarding claim 6, Lenzo et al. disclose a transceiver as recited in the rejection

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of claim 5, wherein the means for transmitting or receiving on a first frequency designated for downlink transmission within a first sector during a first time period further comprises: a base station transmitting to a subscriber unit within the first sector (col. 2, lines 47-49).

Regarding claim 7, Lenzo et al. disclose a transceiver as set forth in claim 5, wherein the means for transmitting or receiving on a first frequency designated for downlink transmission (col. 2, lines 47-49) within a first sector during a first time period further comprises: a subscriber unit within the first sector receiving from a base station (col. 2, lines 54-57).

Regarding claim 8, Lenzo et al. disclose a transceiver as set forth in claim 5, wherein the means for receiving or transmitting on a second frequency different from the first frequency and designated for uplink transmission (col. 2, lines 49-51) within the first sector during a second time period following the first time period further comprises: a base station transmitting to a subscriber unit within the second sector (col. 2, line 66-col. 3, line 27).

Regarding claim 9, Lenzo et al. disclose a transceiver as set forth in claim 5, wherein the means for receiving or transmitting on a second frequency different from the first frequency and designated for uplink transmission within the first sector during a second time period following the first time period further comprises: a subscriber unit

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within the second sector receiving from a base station (col. 2, line 66-col. 3, line 27).

Regarding claim 10, Lenzo et al. disclose a method of time sharing frequencies reserved for FDD operation comprising the steps of: transmitting to a subscriber unit during a first time period on a downlink frequency designated for downlink transmission; receiving from the subscriber unit during a second time period following the first time period on an uplink frequency designated for uplink transmission; transmitting to a subscriber unit during the second time period on the downlink frequency; and receiving from the subscriber unit during the first time period on the uplink frequency (col. 7, lines 35-45) and (col. 2, line 66-col. 3, line 27). Lenzo et al. do not expressly teach the sectored system as transmitting to a subscriber unit within a first sector; receiving from the subscriber unit within the first sector; transmitting to a subscriber unit within a second sector adjacent to the first sector; and receiving from the subscriber unit within the second sector. However, since Lenzo et al. disclose the specific transmit and receive technique as recited; therefore, it would have been obvious at the time the invention was made to one of ordinary skill in the art to modify the system of Lenzo et al. by specially transmitting to a subscriber unit within a first sector; receiving from the subscriber unit within the first sector; transmitting to a subscriber unit within a second sector adjacent to the first sector; and receiving from the subscriber unit within the second sector in order to obtain the same benefits for sectored systems.

Regarding claim 11, Lenzo et al. disclose a method as recited in the rejection of

claim 10, wherein the steps of transmitting to a subscriber unit within a first sector during a first time period on a downlink frequency designated for downlink transmission and transmitting to a subscriber unit within a second sector adjacent to the first sector during the second time period on the downlink frequency further comprise: transmitting from a single base station to adjacent sectors within a single cell (col. 2, line 66-col. 3, line 27).

Regarding claim 12, Lenzo et al. disclose a method as set forth in claim 10, wherein the steps of transmitting to a subscriber unit within a first sector during a first time period on a downlink frequency designated for downlink transmission and transmitting to a subscriber unit within a second sector adjacent to the first sector during the second time period on the downlink frequency further comprise: transmitting from different base stations to adjacent sectors within adjoining cells (col. 2, line 66-col. 3, line 27).

Regarding claim 13, Lenzo et al. disclose a method signal pattern for time sharing frequencies reserved for FDD operation, comprising: downlink transmission to one or more subscribers during a first time period on a downlink frequency designated for downlink transmission; downlink transmission to one or more subscribers during a second time period following the first time period on the downlink frequency; uplink transmission from the one or more subscribers during the second time period on an uplink frequency designated for uplink transmission; and uplink transmission from the

one or more subscribers during the first time period on the uplink frequency, wherein the downlink and uplink transmissions in sequential time periods on dedicated frequencies (col. 2, line 66-col. 3, line 27). Lenzo et al. fail to particularly disclose the sectorized system as downlink transmission to one or more subscribers within a first sector during a first time period on a downlink frequency designated for downlink transmission; downlink transmission to one or more subscribers within a second sector adjacent the first sector during a second time period following the first time period on the downlink frequency; uplink transmission from the one or more subscribers within the first sector during the second time period on an uplink frequency designated for uplink transmission; and uplink transmission from the one or more subscribers within the second sector during the first time period on the uplink frequency, wherein the downlink and uplink transmissions alternate between sectors in sequential time periods on dedicated frequencies. However, since Lenzo et al. disclose the specific transmit and receive technique as recited; therefore, it would have been obvious at the time the invention was made to one of ordinary skill in the art to modify the system of Lenzo et al. by specially applying this technique in order to obtain the same benefits for sectorized systems.

Regarding claim 14, Lenzo et al. disclose a signal pattern of claim 13 as recited in the rejection of claim 13, wherein the downlink transmission occurs within the first sector on the downlink frequency concurrently with uplink transmission in each adjoining sector on the uplink frequency, and the uplink transmission occurs within the first sector

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on the uplink frequency concurrently with downlink transmission in each adjoining sector on the downlink frequency (col. 5, lines 16-25 and col. 10, lines 48-63).

Conclusion

2. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

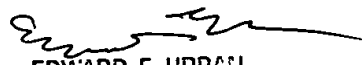
- a) Kent et al. (US-5,625,623) disclose RF site communication link.
- b) Ketseoglou et al. (US-5,732,076) disclose coexisting communication systems.
- c) Hottinen et al. (US-6,611,507) disclose information transmission and soft handoff between FDD and TDD communication systems.
- d) Hall et al. (US-6,208,871) disclose providing a time adjustment to a wireless communication system.
- e) Reese et al. (US-6,226,274) disclose method for multiple access communication.

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Huy Q Phan whose telephone number is 703-305-9007. The examiner can normally be reached on 8AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Urban F Edward can be reached on 703-305-4385. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HP
Mar. 22, 2004


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